

Attack of the killer rabbits: how the rabbit calicivirus story escaped

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[Editors' note: this paper is a lightly edited transcript of the talk.]

Thank you for inviting me to speak to you today. I think this is a very worthwhile focus for the media and for zoologists to reflect on how they interact. Len, don't worry too much about headlines; remember the National Inquirer's, "Bus found on moon."

I must say this zoo here has always been a very happy and rewarding hunting ground for me as a journalist, so it's a kind of weird role reversal to be on display here as a reptile of the press. I'm going to keep my prepared speech as brief as I can, because I'm sure there are plenty of questions. I feel like just throwing up my hands right now and saying, "Guilty, guilty, guilty," you know; so attack away when you want to later on.

I'd like to make a personal observation first, and that's that few other print journalists would have come to the zoo as often as I have over the years in search of zoological stories to tell. I'm not boasting; I'm just surprised that so few of my colleagues have twigged to the idea that if so many people are happily voting with their feet and their money to come here, then there must be a great and sustained public interest in what goes on. I wish I could explain what has made me professionally peculiar in this regard, but I see that the number of visitors here routinely exceeds those attracted to even the most enticing home game by the Swans or a deciding test match between Wallabies and Kiwis.

I'm not sure what wider lessons can be drawn from my experience, but it's true that I'm like many other people who work here, like many of you and in zoology generally, in that my lifelong interest in natural history began with natural childhood curiosity about living things. Unlike us, I think too many journalists have apparently lost that inquisitive streak somewhere along the road towards pursuing their careers. If one of your aims here today is to find ways to improve the quality of media coverage of zoology, perhaps you should be searching further down that road, particularly where it passes through some of the more barren terrain of our secondary education system.

The truth is, however, that zoology is not the only branch of science to be short-changed by journalists. Some branches fair far worse than yours. If I was speaking today to an audience of chemists or physicists or mathematicians, I wouldn't have to labour that point. They think your lot get a dream run.

I've had the good fortune to work for 12 years for a newspaper, the *Sydney Morning Herald*, which, by mass-media standards, took seriously my interest in science and

technology and environmental issues. Among its 240 staff journalists, the *Herald* boasted many thoughtful, well-read and scientifically literate people. More importantly, it had editorial managers who, while they didn't have a clue about science, at least understood intuitively that many readers were interested in and were keen to be kept up to date with news about these issues.

But for the most part, my colleagues thought that I worked in a scarcely fathomable and only vaguely relevant field. I can remember when I was offered the job as the science writer on the *Sydney Morning Herald* in the mid-1980s, one of my colleagues on *The Newcastle Herald* heard that I was going to do this in Sydney and he said, "That's great. What are you going to be doing?" I said, "Science." "Oh, never mind," he said "You might get a good round in a little while."

Many surveys have been done to assess public attitudes towards the coverage of science in the media. On a diminishing scale of 1 to 10, they usually rate it somewhere in the top three subjects that interest them, with politics and economics finishing way down in the eight, nine or ten positions. A recent national CSIRO study has confirmed that trend. But when journalists are asked to rank various key subjects on the same scale, according to their perceptions of what the public wants to know, the results are usually reversed.

There's a conundrum for you. The audience says it wants science, but most of those in a position to deliver it either don't know, believe or heed that demand.

In answer to the specific criticism that when it comes to zoology the media aren't interested in much more than cute, furry animals, I must say that I agree with Dan and Alison's work, it's probably true. An appealing photo of a baby koala is almost certainly going to sell more papers than a picture of a snotty slug. Sorry, all slug people. I wrote what I thought was a fascinating story last year about some research into funnel-web spiders, and one of my colleagues said she couldn't even bear to open that page of the *Herald* when the story appeared. Circulation conscious editors don't want to hear that.

I do want to note that there are important exceptions to the cute, furry brigade, and more to the point, not all cute, furry animal stories are alike. As well, my experience has been that media coverage of them is not always as frivolous as some scientists would like to make out, and that some scientists are not always exactly forthcoming with the kind of objective information that they should be

providing. That's the little case study I'd like to just briefly touch on is "How the calicivirus story escaped".

In late 1993 I was fascinated to read an article in the *Australian Veterinary Journal* about a new virus, then known, I think, as rabbit haemorrhagic virus, being tested as a potential biological control for Australia's nightmarish rabbit problem. I wrote a pretty straightforward news report about it for the *Sydney Morning Herald* and it's hopeful potential; but I knew from reading about the release of the myxoma virus and what I had learned about land degradation while writing a book about that particular scourge, that this rabbit thing would be a major and long-running story if these tests proved positive.

I stayed in touch with the research over the next two years, reporting on it occasionally as landmarks arose, but checking back regularly with what was going on. I would point out that a lot of what journalists do in their working life is never destined for print; a lot of the effort that we put into finding out what's happening is purely to keep yourself educated and in touch with what's happening.

Niall Byrne, the media officer for the Australian Animal Health Laboratories, who has come from Geelong to be here today, patiently educated me and kept me informed of developments. I shared this preparatory task with Leigh Dayton, our science writer, who has had a few guernseys here already, whose training and experience had also set her news nose twitching about this rabbit thing. When it came time to field test the virus on Wardang Island in 1995, Leigh and I were both modestly well versed in what was going on and had a number of contacts in the area. Knowing the paucity of interest shown by most of the electronic media and much of the print media on these sorts of issues, this was exactly the position we hoped to be in; we were ready and prepared to scoop our colleagues.

Things didn't quite work out as planned. You will all, no doubt, be aware that the field trials, or at least the elaborate quarantine procedures set in place for them, suffered a teensy, little mishap in September of that year. Bear with me please while I read to you how the news was made public weeks later, and only when publicity became unavoidable. The virus had now been renamed as rabbit calicivirus. While the new terminology was more correct, the removal of that nasty haemorrhagic word certainly didn't hurt in selling the biological control idea to a public schooled by Peter Rabbit, Flopsy, Mopsy and Cottontail, Watership Down, pet bunnies and the RSPCA.

This, then, is the text of the memorable media release distributed by CSIRO headquarters, under the banner of CSIRO Public Affairs, which was received at the *Sydney Morning Herald* at 1.46 pm on 10 October 1995. I'm not an obsessive timekeeper, it's just on the top of the fax: "Rabbit calicivirus on Wardang Island. The rabbit calicivirus, currently being tested as a biological control on Wardang Island, has successfully spread between warrens in the pens."

Beauty.

It has also spread beyond the quarantine area to two other nearby locations. This necessitated invoking contingency plans required under quarantine regulations. This appears to be good news for farmers and conservation groups, who recognise the urgent need for additional control methods for rabbits, sic. It does constitute a breach of the quarantine precautions, so CSIRO scientists have culled the rabbits in the affected warrens. As a further precaution to prevent spread, rabbits on the rest of the island are now being controlled -

nice word -

under well-developed contingency plans as a precaution against possible spread to the mainland.

What was that last bit? Possible spread? -

CSIRO scientists believe the spread of the virus outside the quarantine area could be due to bird or insect activity. The Wardang Island trials, which were approved by Commonwealth and state agencies, are designed to establish the impact and persistence of the virus in Australian conditions -

It was a success, wasn't it? -

and follows three years of work at CSIRO AAHL.

They didn't even spell out what AAHL was. Of course, it's the Australian Animal Health Laboratory.

The spread of the virus outside the fenced quarantine area suggests that rabbit calicivirus is highly infectious, enhancing its potential for rabbit control. Containment plans are in place, in the unlikely event of spread to the mainland.

It's mentioned again, but it's not very likely. That's okay.

Rabbit populations in the region are being monitored by CSIRO -

thank heavens those scientists are on the job -

with the assistance of Primary Industry South Australia -

the government is in it, too -

and stocks of vaccines have been imported for emergency use -

vaccines, what? -

and subject to further tests, could be made available to protect the domestic rabbit if viruses ever appear on the mainland."

Small subheading, "The future of RCD for rabbit control":

Rabbit calicivirus is a naturally-occurring virus, prevalent in some 40 countries and does not affect people or any other species, including domestic and native animals. This incident indicates that RCD is highly infectious, enhancing its potential for rabbit control.

They said that before, too.

The results of the project will be assessed and presented for national public consultation in 1996.

Well, what a bunch of porkies. Unfortunately for them and very fortunately for us, one of our sources thought so, too, and was incensed enough to have already alerted Leigh Dayton that morning that the fix was in. The whole thing was going to be deliberately underplayed and fobbed off on a trusting public as good news. We knew better.

So we hit the phones and our files and by 6 pm that day, we had filed the following 550-word news story. It appeared on page 3 of the *Herald* the next day. See if you can spot the very, very subtle differences in emphasis between the two accounts of the incidents.

The *Herald* headline was, "Rabbit virus alert as test goes wrong." Pretty modest, by your standards Len, really.

Scientists are on alert in South Australia for signs that a deadly exotic rabbit virus has reached the mainland after mysteriously escaping a quarantine net during experiments on an island in Spencer Gulf. "If the virus spreads unchecked," researchers say, "it could have devastating social and economic consequences for laboratories, pet-rabbit owners and breeders, the rabbit, meat and fibre trade, as well as sporting and professional shooters."

The experiments have been cancelled and under a contingency plan, a mass-rabbit extermination -

we didn't use the word "control" -

is being carried out on Wardang Island, which is just 4 kilometres from the Yorke Peninsula at its nearest point. If the virus reaches the mainland, experts predict it will spread rapidly and begin killing millions of wild rabbits within two days of infection. "They will die of rabbit calicivirus disease, or RCD," said scientists at the Australian Animal Health Laboratory in Geelong, who have studied the virus for four years. Ecologists fear, as well, that if the rabbit population suddenly plummets, foxes and other predators will turn to native animals, further endangering some species.

"However, the most serious consequence of an unplanned release of RCD could be a setback for research on other biological controls," said CSIRO scientist, Dr Hugh Tyndale-Biscoe, head of the Cooperative Research Centre on Vertebrate Bio-Control. "If public confidence is affected, we may not be able to test those," he said.

The head of the Australian Animal Health Laboratories, Dr Keith Murray, said yesterday, "The chances were very low that the virus had yet reached the mainland, but no-one could be certain for some days yet. I think we've got things under control," he said, adding that, "The disease kills very quickly and no deaths have been reported on the island since October 6." Further, there have been no unexplained rabbit deaths on the mainland, South Australian government officials said.

Dr Murray conceded, though, that, "If the disease spreads from the island on a wide front, it would be impossible to stop a potential epidemic." RCD, which kills only rabbits, has devastated wild and domestic rabbit populations in Europe in recent years, killing up

to 95 per cent within 30 hours of infection. CSIRO officials confirmed that the Wardang Island alert began late last month, when scientists discovered that RCD had spread from deliberately infected rabbit warrens to uninfected warrens within a fenced quarantine area on the uninhabited island.

Acting on agreed protocols, they killed all rabbits within the quarantine area. A few days later, rabbits were found to have died in two warrens up to two kilometres away from the quarantine zone -

so this is nearby - two kilometres it escaped -

so a mass-eradication program was conducted to control the 1000 or more wild rabbits on the island. The spread has taken scientists by surprise, as in Europe the disease is known to spread only from rabbit to rabbit. Dr Murray suspects that on Wardang Island, RCD was spread by bush flies. If so, the disease could spread widely, as bush flies are known to travel "hundreds of kilometres" in favourable conditions, said Dr Jim Cullen, acting head of entomology at the CSIRO in Canberra.

The island experiment was designed to test the potential of RCD as a new biological weapon against Australia's worst introduced animal pest. Researchers are optimistic that it will prove as deadly to rabbits as the famous myxomatosis disease, now losing its killing power. The recent incident could prove them right. "It has shown that the virus is more effective than we dared to hope," said Dr Tyndale-Biscoe.

Whatever you may think of the odd touch of mass media hyperbole in that report, I think you'll agree that in a few short hours, we did a far more comprehensive and honest job than the scientists did of informing the public of the potential ramifications of these zoological experiments. With hindsight, it can be seen that our report also set an agenda that the rest of the media followed, by touching base with most of the significant public issues that subsequently have arisen out of this research.

If a couple of mere hacks could readily work this all out at the time, one wonders why the field trials went ahead at such a site and why the public consultation promised by the CSIRO did not take place first and include a risk assessment of carrying out the trials. It was largely left to us and to political lobbyists to ask such questions. I would point out to you that Leigh Dayton, James Woodford and I subsequently went on to follow this story blow by blow, with many scoops. For our efforts, we won the Michael Daley Award for science writing last year, for the best coverage of a news story and the best entry overall. That's not mere trumpet blowing on my part.

I lament the fact that journalists consistently rate somewhere down there with real estate and used car salesmen and only marginally above politicians in surveys ranking public attitudes towards the various occupational groups. But through this brief account of a case study, I hope you might at least take away with you today the idea that not all journalists take the shallow, cute, furry animal approach and that the quality media can act as watchdogs that bite when scientists start compromising the sort of professional standards to which journalists should aspire.

QUESTIONS & ANSWERS

Beale

BOB SEAMARK: I actually took over Hugh Tyndale-Biscoe's job but I was luckily in Japan at the time of the release - - -

BOB BEALE: Very lucky.

BOB SEAMARK: - - - and came back and decided I didn't want that aspect of the job and avoided it.

BOB BEALE: You're a canny man.

BOB SEAMARK: The first job I ever had in my life was a copy boy in a newspaper. One thing as young copy boys we used to do was to take - over the phone in those days - take the script from the reporters and then take it eventually to the subeditors who looked at it and then reworked it in a major way. They took out the things they thought were interesting. At the time they were looking for so many column inches to fill. They also were responsible for choosing the headline. The major problem I have had in my research career has been the subeditors and not the journalists. In other words, we write a good story with the help of the journalists. Journalists, I have found, have always been very cooperative but they have never had any real control over the headlines nor the captions that went on the pictures. These are the things that people tend to read first and that excite them and these are the things they tend to remember and yet the journalists don't seem to have a lot of control over that. Am I right?

BOB BEALE: Yes. As several people have said, it's a source of immense frustration to the reporters but it's a necessary evil. You have to understand that you can sit and read your *Sydney Morning Herald* at great leisure. You can clip it out and photocopy it. You can come back to it in 3 weeks' time and go, "Look what the fools did here. Look at that mistake. How could Beale have done that?" I killed off Paul Ehrlich a couple of weeks ago by mistake. I just put "the late" in front of his name. I will clean up the language and say, "Stuff happens." It tends to happen a lot in the high pressure world of the media.

I can't start to give you an idea of how difficult it is but if you think about the number of words in the *Sydney Morning Herald* - Brian Henderson tells you some news on telly in the evening, you have got an average of say 1 minute 10 seconds for each story report, even if you speak the whole way through that 1 minute and 10 seconds maybe you can get out two to three words a second depending on how fast you speak. You can soon work out that Brian Henderson's news would in print fill about two-thirds of the front page of the *Sydney Morning Herald*.

On a Wednesday there might be 10 to 12 news pages for local news in the *Herald*, then three to five foreign pages, then the letters page, then the daily features page, arts and so on. It's the equivalent of putting out a small novel every day and you can only do that by having 240 people do it. I could put out one fabulous edition of the *Sydney Morning Herald* fully refereed and peer reviewed and read back to everybody if I had 6 months, but you want your morning news on the front doorstep in the morning; so be a critical newspaper consumer.

I think Len's conclusion was really interesting and it was gratifying to me to hear him say that, after spending all of that time going through it, in the end the truth does out. Newspapers are not scientific papers. They're not the Bible, they're not books. They're newspapers. They don't contain "the" story, they contain "the" story as best you could find it out by the time the deadline came to file your copy and then it's presented and cut and re-edited and headlined in the best possible way that they can do it between 6.30 when you file your story and 9.30 when the production people are screaming, "Give us the proofs."

So it's a highly messy business and so if you read a newspaper sequentially in the end you will get something approximating booklike quality but that's just a fact of life.

TERRY KORN (New South Wales Agriculture and state RCD coordinator): Bob, I enjoy reading your articles. Just for the group's information the public response to the escape of the disease in New South Wales resulted in a smattering of inquiries about biodiversity issues and prey switching and all that but the big response we had was from the pet owners. In our head office at Orange we have an operational room that we have set up for exotic disease emergencies which has got, you know, phones dropping out of the ceiling, wires everywhere and we have actually had to activate that room to answer all the inquiries from pet rabbit owners.

They were the big group within the community that were really concerned. We had that room set up for 4 or 5 days to overcome that crisis. All our phones were flooded the whole time with inquiries from that group. Biodiversity and conservation issues were way down the line and I guess that reflects on some of the media analysis before where welfare issues are top-line interest items. But that's what happened in New South Wales at that time in October 95.

BOB BEALE: How long did that period last?

TERRY KORN: It lasted intensively for no longer than a week. We only had the operational room in place for that long but the interest still continues to this day [18 October 1997] about how they're going to look after their pet rabbits. Once we had the vaccine in place and we could issue that and we assured them that it was there, that hosed the fire down a little but Niall Byrne and his group had to run with it a lot longer. But that was the really intense period when the public responded immediately.

BOB BEALE: My point would be that since that time, since that sense of crisis and emergency has passed among rabbit owners - and media focused on that because that was the issue of the day and that was far more likely to sell newspapers than saying, "Hey, the rare Hakea what's-you-may-call-it is going to come back because rabbits aren't going to be chewing it any more and it will probably happen in about 5 years' time, it's something great to be excited about." Newspapers and the media are working on that day, that's their focus, that day, what's news. If that's what's news that day they will focus on that but when that day passes they need another focus. If they can keep the fear of your pet bunny dying going for 3 days then great, that will save them thinking up a new angle but after that if you have watched and followed that debate and the media coverage and the events as I have, I have been quite gratified by how well the media have covered all the other issues as well.

TERRY KORN: From my viewpoint as coordinator I have had no problem with the media. We have kept them briefed and cooperated with them. I would have been interested to hear from Len about strategies that he has used or other scientists have used to work closely and well with the media. I think that's something we haven't got out of this forum yet.

BOB BEALE: I think Niall should be given a chance to say something.

NIALL BYRNE (CSIRO, Australian Animal Health Laboratory, involved in both bats and morbillivirus - lyssavirus, morbillivirus, calicivirus, kangaroo blindness and a few others.): Just a quick observation on lyssavirus which relates because there's some similarities but some substantial differences: what would have happened differently if the original New South Wales press release on lyssavirus had actually been picked up, because the original discovery of a lyssavirus in bats in northern New South Wales attracted almost no media attention. New South Wales Agriculture and Health tried to give it a bit of a run but I think they put it out on Friday afternoon.

BOB BEALE: No. Why would they do that sort of thing at the worst possible time?

NIALL BYRNE: Perhaps I'm being a little too generous to New South Wales Health there. Queensland did try to get a good run to get a little bit of an early warning without alarming people. In a sense they failed and I think the media in a sense failed at that point as well. Perhaps it's more their fault than the media's fault that they didn't manage to get it. Perhaps they were so low key that you couldn't see the story. The end result was an overreaction, I think, and similarly with calicivirus.

There's absolutely no doubt that the original press release on calicivirus was an unmitigated disaster. I first heard that we had a bit of a problem on Wardang on the Friday afternoon. I didn't realise how serious it was. We had press releases drafted. There were agencies around the country. In fact, press releases on this particular project had to be approved by the Meat Research Corporation, the New Zealand government, the Australia government, several state departments, CSIRO and a few others.

For those who are interested - and I won't put it up now because it's a bit of a diversion, it's perhaps a little too defensive - I can show you the original words I wrote which were a little different to what came out after 3 days of very long teleconferences and fighting. The original press release was certainly an unmitigated disaster. The information was in there but the way it was expressed was totally out of balance.

BOB BEALE: If you give me a copy of your original press release I will incorporate it in the footnotes to my speech and make sure that it's published.

NIALL BYRNE: We will have it, we will have it.

BOB BEALE: It would be nice to put it on record.¹

NIALL BYRNE: I ought to be a little careful there. I will show you over a beer but you can't take it home.

¹ Postscript January 2003 by Bob Beale: It is worth noting that the original press release referred to was not subsequently made available.

BOB BEALE: Anyone with a camera?

NIALL BYRNE: Because what it did, yes, it damaged, it certainly damaged all of the credit we had been building up in terms of media liaison with the major science writers including in particular the *Sydney Morning Herald*. We went into debit in 24 hours, which was a fairly substantial problem. It has taken a fair amount of time for us, for Leigh and me, to get back on speaking terms and that was a shame. That was a real shame because it messed up some of the subsequent discussion, which could have been much easier.

BOB BEALE: Yes.

NIALL BYRNE: What it also did is it lost us control of aspects of the story in a very dramatic way because Bob did a very, very - looking at it with hindsight, looking back it's a good report. As you say, it says everything. But because our original press release had been ignored by most of the media because the actual news was buried so deep in it that most of them hadn't managed to mine it out, we gave total control of the actual announcement of the story to the *Sydney Morning Herald*. What happened is AAP read the *Sydney Morning Herald*, actually misread the *Sydney Morning Herald* so at 7 o'clock the next morning we were woken up by radio stations saying, "The anti-rabbit virus that's being tested on Wardang Island in Spencer Gulf has reportedly reached the mainland."

BOB BEALE: Yes.

NIALL BYRNE: Now, Bob didn't say that but all of the radio or most of the radio that followed Bob's story did say that so it got worse. Not only had we messed up the initial announcement but then by losing control people were reporting from the report and not from our original material. That caused us quite a lot of problems for the following few days which were all then exacerbated. Someone was talking about vaccines. The following week the ABC announced that CSIRO was giving out vaccines. Now, we had said we had this pool and it was going to be made available in South Australia through the Department of Ag who were the responsible people. ABC TV News just told the whole country, "Go along and see CSIRO, get your free vaccine." So every CSIRO site from the Division of Mines to Fisheries had rabbit owners lining up outside the door, probably some of them with pet rabbits saying, "Where can I get it vaccinated?"

BOB BEALE: "Save my Flopsy."

NIALL BYRNE: Having said that, what I would like to ask you, how did it go after that? Because the original thing was a mess and a lot of agencies were involved in it, subsequently we managed to make sure that the lines between the people working in the field and the people who were trying to coordinate things were way, way shorter and at later stages you had mobile numbers for the field staff and routinely were able to talk directly to the people in the field. How did it go afterwards?

BOB BEALE: In trying to get through to you over the next 12 weeks after that story broke it was next to impossible and both Leigh and I ended up feeling very frustrated because you might not get a call back for 6 hours and when you're on a deadline that gives you only a few hours; that's an impossible time wait. That was why we went to the trouble of finding out mobile numbers and once we had direct - when we could get through to you.

In some cases the researchers themselves gave us their numbers because they had seen that we were trying very hard to keep it accurate and keep a balance and were keen to speak directly with us and we found that quite useful. It was the building up of the personal relationships that was important. I don't know who mentioned about tips. I hate press releases. I hate them to my gizzard. My children learned to draw on the back of them. That's what I think of them. Really you cannot substitute anything for personal human contact and if any of you have to deal with the media then you must become good consumers of the media. You must study who you respect in the media, which outlets you respect and target those particular people, invite them out for a cup of coffee, tell them to come out and see where you work. Go see them.

MIKE ARCHER: Bob, something happened to us recently which was very pleasing actually. It was a new turn of events for me at least in interactions with the media. In the course of this idiocy that followed on suggestions that we were making about the need to start to increase use of kangaroos and native animals to phase out the use of cattle and sheep in Australia's rangelands - - -

BOB BEALE: Skippy killer.

MIKE ARCHER: Yes, yes - we were invited by the *Canberra Times* to write a science and technology article for them which they requested and had back in a week and they published nearly verbatim actually under my name and I thought, what's the problem with doing that sort of thing in the media? Why is there this need - as two people have pointed out, involving major problems about subediting - why is there the need to have the stories rewritten? Why can't we have more of a consideration by the media of having original stories written by the people who actually have that information themselves and published by the paper under their name?

BOB BEALE: How long was the article that you wrote?

MIKE ARCHER: I think it was about 800-900 words.

BOB BEALE: So it appeared on one of the features pages?

MIKE ARCHER: It was their standard science and technology page and I think they do this every week.

BOB BEALE: Yes, exactly. They have got a whole week to prepare it. They have got a whole week to wait for your copy to come back. You raise a good point. Features pages have an entirely different deadline, in print anyway, and documentary and current affairs people on television and radio generally have a much longer lead time available to them, and you can be proactive and get in there first. I mean, why sit there and wait for the media juggernaut to roll over you? Why not go out there and cultivate it and become good and practised at it and learn where the opportunities are?

The *Sydney Morning Herald*, for example, has a page every day opposite the letters - in newspaper terminology the op ed page - which has got your Ross Gittins columns and your Gerard Henderson columns, but there's always an 800, 900-word slot that is open for people to be writing from the outside. People like Allen Greer have learnt that little slot and have written for there occasionally and have had the opportunity to get their copy in and generally speaking, the people who edit those pages have time. There's one person who just does that page, that's all they do. That's their day's work. All they're doing is laying it out and ushering it in and generally speaking, the quality is high. So yes, it's a great idea.

KATHY DAVIS (Newcastle Uni): You gave the impression that, due to economics, newspapers have to follow society's knowledge of native biodiversity rather than lead because it wouldn't sell. I was just wondering what source you would recognise then as being able to educate the public on biodiversity, native biodiversity.

BOB BEALE: People who know what they're talking about, really, and it's a seat-of-the-pants judgment because my experience in 12 years of science writing is that the people with the qualifications and the title don't always know what they're talking about. You might always be referred to the head of the department, for example, who has no clue about the actual detail of research or body of knowledge. He's essentially an administrator who might have finished his active research 10 years beforehand and is quite out of touch. Those sorts of things happen all the time.

KATHY DAVIS: The point I'm trying to make is that if the newspapers, due to the economics, cannot take a leading position then the politicians who say that they want to support the Australian environment cannot put into place an effective way in which the public can learn about biodiversity, apart from the whales with the pictures that Dan Lunney was talking about.

BOB BEALE: Sure.

KATHY DAVIS: There doesn't seem to be in place any procedure that's recognised.

BOB BEALE: No, there isn't.

MS: Just to add to that, I think what Kathy is getting at is basically we can't see the newspapers as an education resource for people if you are only responding to what they want to hear about or what their knowledge is about.

BOB BEALE: No, we lead as well as follow. Newspapers, for example, will take an active decision to defame somebody and publish and be damned even though they know that the lawyers are going to howl because they think it's in the public interest.

MS: And it will sell papers.

BOB BEALE: Likewise, they will run dull but worthy stories as the page I lead. I mean, I really don't read most of the page I lead stories in the *Sydney Morning Herald* because they bore the heck out of me, they're dull, but they are there out of public interest, not because they sell newspapers.

MS.....: So you feel in that situation that the papers could lead, for example, on educating the public on biodiversity or the more intricate aspects of viral spread.

BOB BEALE: Yes, I think they can and they do.

MS.....: I find accuracy is a problem. Expecting papers to come up with an accurate scientific explanation of say viral technology or virus spread with regard to lyssavirus or any of the other viruses that have been mentioned I think is asking a lot. I think this is where it has to interact with press releases. I think you're stuck with press releases. I have had so many stories I have given reporters mangled beyond any shred of recognition, even sometimes when I have actually written it on paper in words of not more than one syllable and it still comes back incorrect. I think it is a real problem and I don't know how we can get over that but I would be interested to see if you can suggest a few methods of how we could lead on these difficult topics using the newspapers.

BOB BEALE: It's a huge battle you're talking about, the general scientific literacy of the population, that's why I made the reference to secondary school. I think our secondary schooling does an appalling job in teaching kids a genuine grasp of scientific concepts. They may be able to regurgitate facts. It drives me nuts.